

HOLTEC INTERNATIONAL

Patents Granted by the USPTO¹

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SUBJECT AREAS	IDENTIFYING NOTATION
Wet storage of used nuclear fuel including high density fuel rack design, operation, and manufacturing	I
Dry storage/transport of used nuclear fuel or high-level waste including design innovations, ancillary design	II
Below-ground storage of used nuclear fuel or high-level waste	III
Metal Matrix composites	IV
Civil/structural design embodiments	V
Tubular heat exchanger embodiments	VI
Water cooled condensers	VII
Air-cooled Condensers	VIII
Solar power plant design/operation	IX
Nuclear power plant design/operation	X

	Title	Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
1	Radioactive Fuel Cell Storage Rack	05-1983	Granted	4,382,060	Kris Singh Maurice Holtz	I
2	Heat Exchanger for Withstanding Cycle Changes in Temperature	1980	Granted	4,207,944	Kris Singh Maurice Holtz Alan Soler	VII

¹ This material has been extracted from Holtec's website.

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
3	Apparatus Suitable for Transporting and Storing Nuclear Fuel Rods and Methods for Using the Apparatus	04-1999	Granted	5,898,747	Kris Singh	II
4	Radiation Absorbing Refractory Composition	12-Oct-99	Granted	5,965,829	Tom Haynes	IV
5	Extrusion Fabrication Process for Discontinuous Carbide Particulate Metal Matrix Composites Super Hypereutectic AlSi Alloy	28-Mar-20	Granted	6,042,779	E. Oschmann	IV
6	External Steam Dump	19-Nov-02	Granted	6,481,208	Ranga Nadig	VII
7	Duct Photon Attenuator	11-Feb-03	Granted	6,519,307	Kris Singh Everett Redmond John Wagner Steve Agace	II
8	HI-TRAC Operation	01-July-03	Granted	6,587,536	Kris Singh Steve Agace	II
9	Deaeration of Makeup Water in a Steam Surface Condenser		Granted	6,609,042	Ranga Nadig	VII
10	Cask Mating Device	23-Sept-03	Granted	6,625,246	Kris Singh Steve Agace	II
11	Improved Ventilator Overpack	06-Apr-04	Granted	6,718,000	Kris Singh Steve Agace	II
12	Below Grade Canister Transfer Facility	21-Sept-04	Granted	6,793,450	Kris Singh Steve Agace	II
13	Seismic Cask Stabilization Device	01-Feb-05	Granted	6,848,223	Kris Singh Alan Soler	II
14	Hermetically Sealable Transfer Cask	08-Feb-05	Granted	6,853,697	Kris Singh Steve Agace	II
15	Autonomous Cask Translocation Crane (Cask Lifting Device Small Nuclear Plants)	25-Oct-05	Granted	6,957,942	Steve Agace	II
16	Underground System and Apparatus for Storing Spent Nuclear Fuel	27-June-06	Granted	7,068,748	Kris Singh	III
17	Forced Gas Flow Canister Dehydration	29-Aug-06	Granted	7,096,600	Kris Singh	II

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
18	Below Grade Cask Transfer Facility	21-Nov-06	Granted	7,139,358	Kris Singh Steve Agace	III
19	Closed Loop Forced Gas Fuel Dehydration	01-May-07	Granted	7,210,247	Kris Singh	II
20	Fin Tube Assembly for Heat Exchanger and Method	13-Nov-07	Granted	7,293,602	Ranga Nadig	VI
21	Method and Apparatus for Maximizing Radiation Shielding Cask Transfer Procedures	12-Feb-08	Granted	7,330,525	Kris Singh Steve Agace	II
22	System and Method of Storing High Level Waste	12-Feb-08	Granted	7,330,526	Kris Singh	II
23	Systems and Methods for Storing Spent Nuclear Fuel Having Protection Design	15-Sept-19	Granted	7,590,213	Kris Singh	II
24	Manifold Systems for the Ventilated Storage of High-Level Waste and a Method of Using the Same to Store High-Level Waste in a Below-Grade Environment	09-Mar-10	Granted	7,676,016	Kris Singh	II
25	Method and Apparatus for Dehydrating High Level Waste Based on Dew Point Temperature Measurements	04-May-10	Granted	7,707,741	Kris Singh	II
26	Apparatus and Method for Supporting Fuel Assemblies in an Underwater Environment having Lateral Access Loading	11-May-10	Granted	7,715,517	Kris Singh Evan Rosenbaum	I
27	Apparatus for Providing Additional Radiation Shielding to a Canister Holding Radioactive Materials, and Method of Using the Same to Handle and/or Process Radioactive Materials	31-Aug-10	Granted	7,786,456	Kris Singh	II
28	Apparatus, System and Method for Facilitating Transfer of High-Level Radioactive Waste to and/or from a Pool	26-Oct-10	Granted	7,820,870	Kris Singh	II
29	System and Method of Storing and/or Transferring High Level Radioactive Waste	26-Apr-11	Granted	7,933,374	Kris Singh	II
30	Apparatus for Transporting and/or Storing Radioactive Materials having Jacket	09-Aug-11	Granted	7,994,380	Kris Singh Steve Agace	II

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
	Adapted to Facilitate Thermosiphon Fluid Flow					
31	Method of Removing Radioactive Materials from Submerged State and/or Preparing Spent Nuclear Fuel for Dry Storage	29-Nov-11	Granted	8,067,659	Kris Singh Steve Agace	II
32	Systems and Methods for Storing Spent Nuclear Fuel	17-Jan-12	Granted	8,098,790	Kris Singh	II
33	Canister Apparatus and Basket for Transporting, Storing and/or Supporting Spent Nuclear Fuel	13-Mar-12	Granted	8,135,107	Kris Singh Steve Agace	II
34	Apparatus and Method for Supporting Fuel Assemblies in an Underwater Environment having Lateral Access Loading	20-Mar-12	Granted	8,139,706	Kris Singh Evan Rosenbaum	I
35	Single-Plate Neutron Absorbing Apparatus and Method of Manufacturing the Same	17-Apr-12	Granted	8,158,962	Kris Singh Evan Rosenbaum Tom Haynes	V
36	Method and Apparatus for Dehydrating High Level Waste Based on Dew Point Temperature Measurements	18-Sept-12	Granted	8,266,823	Kris Singh	II
37	Apparatus, System and Method for Facilitating Transfer of High-Level Radioactive Waste to and/or from a Pool	02-Oct-12	Granted	8,277,746	Kris Singh Steve Agace	II
38	Atomized Pico-scale Composite Aluminum Alloy and Method Thereof	04-Dec-12	Granted	8,323,373	Kris Singh Tom Haynes	IV
39	Apparatus, System and Method for Low Profile Translation of High-Level Radioactive Waste Containment Structure	01-Jan-13	Granted	8,345,813	Kris Singh	II
40	Method of Storing High-Level Waste	08-Jan-13	Granted	8,351,562	Kris Singh	III
41	Apparatus for Providing Additional Radiation Shielding to a Container Holding Radioactive Materials, and Method of Using the Same to Handle and/or Process Radioactive Materials	09-Apr-13	Granted	8,415,521	Kris Singh Steve Agace	II

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
42	Spent Fuel Basket, Apparatus and Method Using the Same for Storing High Level Radioactive Waste	01-Oct-13	Granted	8,548,112	Kris Singh Steve Agace	II
43	System and Method for Preparing a Container Loaded with Wet Radioactive Elements for Dry Storage	22-Oct-13	Granted	8,561,318	Kris Singh John Griffiths	II
44	Apparatus for Supporting Radioactive Fuel Assemblies and Methods of Manufacturing the Same	05-Nov-13	Granted	8,576,976	Kris Singh Steve Agace	II
45	Heat Exchanger Apparatus for Accommodating Thermal and/or Pressure Transients	10-Dec-13	Granted	8,602,089	Kris Singh	VI
46	Systems and Methods for Storing Spent Nuclear Fuel	07-Jan-14	Granted	8,625,732	Kris Singh	II
47	System and Method for the Ventilated Storage of High-Level Radioactive Waste in a Clustered Arrangement	25-Feb-14	Granted	8,660,230	Kris Singh Steve Agace	II
48	Single Plate Neutron Absorbing Apparatus and Method of Manufacturing the Same	25-Mar-14	Granted	8,681,924	Kris Singh Evan Rosenbaum Tom Haynes	IV
49	Fuel Basket Spacer, Apparatus and Method using the same for Storing High Level Radioactive Waste	29-Apr-14	Granted	8,712,001	Kris Singh Steve Agace	II
50	Manifold System for the Ventilated Storage of High-Level Waste and a Method of Using the Same to Store High Level Waste in a Below Grade Environment	06-May-14	Granted	8,718,220	Kris Singh	III
51	Method of Transferring High Level Radioactive Materials and System for the Same	06-May-14	Granted	8,718,221	Kris Singh John Griffiths	II
52	Method and Apparatus for Preparing Spent Nuclear Fuel for Dry Storage	27-May-14	Granted	8,737,559	Kris Singh	II
53	Apparatus for Storing and/or Transporting High Level Radioactive Waste and Method for Manufacturing the Same	05-Aug-14	Granted	8,798,224	Kris Singh	II

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
54	Heat Exchanger Apparatus for Converting a Shell-Side Liquid into a Vapor	16-Sept-14	Granted	8,833,437	Kris Singh	V
55	Radioactive Filter Storage Device and Method for Removing the Same (Filter Cask and Shield Gate)	11-Nov-14	Granted	8,884,259	Steve Agace	II
56	Ventilated System for Storing High Level Radioactive Waste	09-Dec-14	Granted	8,905,259	Kris Singh John Griffiths	II
57	Canister Apparatus and Basket for Transporting, Storing and/or Supporting Spent Nuclear Fuel	06-Jan-15	Granted	8,929,504	Kris Singh Steve Agace	II
58	System, Method and Apparatus for Providing Additional Radiation Shielding to High Level Radioactive Materials	31-Mar-15	Granted	8,995,604	Kris Singh Steve Agace Stefan Anton	II
59	System and Method for Reclaiming Energy from Heat Emanating from Spent Nuclear Fuel	07-Apr-15	Granted	9,001,958	Kris Singh John Griffiths Debu Majumdar	II
60	Method for Controlling Temperature of a Portion of a Radioactive Waste Storage System and for Implementing the Same	11-Aug-15	Granted	9,105,365	Kris Singh Rick Springman	II
61	System and Method for Preparing a Container Loaded with Wet Radioactive Elements for Dry Storage	20-Oct-15	Granted	9,165,690	Kris Singh John Griffiths	II
62	System, Method and Apparatus for Providing Additional Radiation Shielding to High Level Radioactive Materials	08-Dec-15	Granted	9,208,914	Kris Singh Steve Agace Stefan Anton	II
63	Neutron Shielding Ring, Apparatus and Method Using the Same for Storing High Level Radioactive Waste	23-Feb-16	Granted	9,269,464	Kris Singh Steve Agace	II
64	Ventilated System for Storing High Level Radioactive Waste	22-Mar-16	Granted	9,293,229	Kris Singh John Griffiths	II
65	Container System for Radioactive Waste	19-Jul-16	Granted	9,396,824	Steve Agace	II
66	System and Method for Storing and Leak Testing a Radioactive Materials Storage Canister	13-Sep-16	Granted	9,442,037	Steve Agace	II

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
67	Ventilated Transfer Cask with Lifting Feature	11-Oct-16	Granted	9,466,400	Kris Singh John Griffiths	II
68	Method of Storing High Level Radioactive Waste	13-Sept-16	Granted	9,443,625	Kris Singh	II
69	System and Method for the Ventilated Storage of High-Level Radioactive Waste in a Clustered Arrangement	04-Oct-16	Granted	9,460,821	Kris Singh Steve Agace	III
70	Fail Safe Control Rod Drive System for Nuclear Reactor	15-Nov-16	Granted	9,496,057	Kris Singh Leyland Vann	X
71	System for Storing High-Level Radioactive Waste	06-Dec-16	Granted	9,514,853	Kris Singh John Griffiths	II
72	Atomized Piso scale Composite Aluminum Alloy and Method Thereof	04-Dec-12	Granted	9,551,048	Tom Haynes	V
73	Passive Reactor Cooling System	07-Mar-17	Granted	9,589,685	Kris Singh Joseph Rajkumar	X
74	Bypass Steam Dissipation Device with an Integrated Evaporative Core for Increased Residence Time	14-Mar-17	Granted	9,593,598	Akilesh Bapat Vytas Maciunas Indresh Rampall	VII
75	Heat Exchanger Apparatus for Converting a Shell-Side Liquid into a Vapor	04-Apr-17	Granted	9,612,058	Kris Singh	VI
76	Storage System for Nuclear Fuel	02-May-17	Granted	9,640,289	Kris Singh Rick Springman Steve Agace	II
77	Cask Apparatus, System and Method for Transporting and/or Storing High Level Waste	06-June-17	Granted	9,672,948	Kris Singh	II
78	Apparatus for Supporting Radioactive Fuel Assemblies and Methods of Manufacturing the Same	08-Aug-17	Granted	9,728,284	Kris Singh Steve Agace	II
79	System for the Low-Profile Translation of High-Level Radioactive Waste	08-Aug-17	Granted	9,728,286	Kris Singh	V
80	Container and System for Handling Damaged Nuclear Fuel, and Method of Making the Same	29-Aug-17	Granted	9,748,009	Kris Singh	II

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
81	Method and Apparatus for Preparing Spent Nuclear Fuel for Dry Storage	12-Sept-17	Granted	9,761,338	Kris Singh	II
82	Manifold System for the Ventilated Storage of High-Level Waste and a Method of Using the Same to Store High Level Waste in a Below Grade Environment	12-Sept-17	Granted	9,761,339	Kris Singh	III
83	Vertical Bundle Air Cooled Heat Exchanger, Method of Manufacturing the Same, and Power Generation Plant Implementing the Same	26-Sept-17	Granted	9,770,794	Kris Singh Indresh Rampall Joseph Rajkumar	VIII
84	Nuclear Reactor Shroud	26-Sept-17	Granted	9,773,576	Kris Singh Indresh Rampall Joseph Rajkumar	X
85	Radioactive Material Storage Canister	03-Oct-17	Granted	9,779,843	Kris Singh John Griffiths Joseph Meckley	II
86	Passive Reactor Containment Protection System	10-Oct-17	Granted	9,786,393	Kris Singh	X
87	Component Cooling Water System for Nuclear Power Plant	10-Oct-17	Granted	9,786,394	Kris Singh Joseph Rajkumar	X
88	Air-Cooled Heat Exchanger and System and Method of Using the Same to Remove Waste Thermal Energy from Radioactive Materials	10-Oct-17	Granted	9,786,395	Kris Singh Joseph Rajkumar	VIII
89	Autonomous Self-Powered System for Removing Thermal Energy from Pools of Liquid Heated by Radioactive Materials, and the Method of the Same	31-Oct-17	Granted	9,803,510	Kris Singh Indresh Rampall Joseph Rajkumar	X
90	System and Method of Storing and/or Transferring High Level Radioactive Waste	28-Nov-17	Granted	9,831,005	Kris Singh	II
91	Nuclear Steam Supply System	26-Dec-17	Granted	9,852,820	Kris Singh Joseph Rajkumar	X
92	High-Density Subterranean Storage System for Nuclear Fuel and Radioactive Waste	26-Dec-17	Granted	9,852,822	Kris Singh	III

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
93	Nuclear Fuel Core, Nuclear Fuel Cartridge and Methods of Fueling and/or Defueling a Nuclear Reactor	08-Jan-18	Granted	8,865,363	Kris Singh Stefan Anton Peter Stefanovic	X
94	Reactivity Control Device for Storing Nuclear Fuel	23-Jan-18	Granted	9,875,819	Kris Singh Steve Agace	II
95	Space Saver Flanged Joint for a Nuclear Reactor Vessel	13-Feb-18	Granted	9,892,806	Kris Singh Joseph Rajkumar	X
96	Passively-Cooled Spent Nuclear Fuel Pool System and Method Therefor	13-Mar-18	Granted	9,916,910	Kris Singh Joseph Rajkumar	X
97	Systems and Methods for Storing Spent Nuclear Fuel	12-Mar-18	Granted	9,916,911	Kris Singh	I
98	Nuclear Power Generation System	20-Mar-18	Granted	9,922,740	Kris Singh Joseph Rajkumar	X
99	System and Method for Minimizing Movement of Nuclear Fuel Racks During a Seismic Event	05-June-18	Granted	9,991,010	Kris Singh Charles Bullard	V
100	Passively Cooled Spent Nuclear Fuel Pool System	26-June-18	Granted	10,008,296	Kris Singh Joseph Rajkumar	X
101	Canister Apparatus and Basket for Transporting, Storing and/or Supporting Spent Nuclear Fuel	17-July-18	Granted	10,026,514	Kris Singh Steve Agace	II
102	Apparatus for Supporting Spent Nuclear Fuel	31-July-18	Granted	10,037,826	Kris Singh Stefan Anton	II
103	Method for Storing Radioactive Waste, and System for Implementing the Same	14-Aug-18	Granted	10,049,777	Kris Singh	II
104	Loss-of-Coolant Accident Reactor Cooling System	09-Oct-18	Granted	10,096,389	Kris Singh Joseph Rajkumar	X
105	Nuclear Steam Supply System	16-Oct-18	Granted	10,102,936	Kris Singh Joseph Rajkumar	X
106	Shutdown System for a Nuclear Steam Supply System	30-Oct-18	Granted	10,115,487	Kris Singh Joseph Rajkumar	X
107	Dry Cooling System for Power Plants	20-Nov-18	Granted	10,132,568	Kris Singh Vytas Maciunas	VIII

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
					Indresh Rampall	
108	Dry Cooling Systems for Powerplants	25-Dec-18	Granted	10,161,683	Kris Singh Vytas Maciunas Indresh Rampall	VIII
109	Ventilated System for Storing High Level Radioactive Waste	04-Dec-18	Granted	10,147,509	Kris Singh	II
110	Atomized Pico scale Composition Aluminum Alloy Method Thereof	12-Feb-19	Granted	10,217,537	Kris Singh Tom Haynes Martin Walcher Martin Balog	IV
111	Container for Radioactive Waste	26-Feb-19	Granted	10,217,537	Kris Singh Steve Agace	II
112	System and Method for Preparing a Container Loaded with Wet Radioactive Elements for Dry Storage	12-Mar-19	Granted	10,229,764	Kris Singh John Griffiths	II
113	Tubular Heat Exchanger Having Multiple Shell-side and Tube-side Fluid Passes	21-May-19	Granted	10,295,266	Kris Singh Vytas Maciunas	VI
114	Storage System for Nuclear Fuel	21-May-19	Granted	10,297,356	Kris Singh Richard Springman Steve Agace	II
115	Wet Storage Facility for Nuclear Fuel	04-June-19	Granted	10,311,987	Kris Singh Joseph Rajkumar	I
116	Apparatus for Storing and/or Transporting High-Level Radioactive Waste, and Method for Manufacturing the Same	25-June-19	Granted	10,332,642	Kris Singh	II
117	Vertical Bundle Air-Cooled Heat Exchanger, Method of Manufacturing the Same, and Power Generation Plant Implementing the Same	09-July-19	Granted	10,343,240	Kris Singh Indresh Rampall Joseph Rajkumar Frank Sanderlin	VIII
118	Nuclear Fuel Storage Facility with Vented Container Lids	06-Aug-19	Granted	10,373,722	Kris Singh	II

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
119	Steam Generator for Nuclear Steam Supply System	27-Aug-19	Granted	10,395,783	Kris Singh Joseph Rajkumar	X
120	Container for Storing and/or Transporting Spent Nuclear Fuel	10-Sept-19	Granted	10,410,756	Kris Singh	II
121	System and Method for Reclaiming Energy from Heat Emanating from Spent Nuclear Fuel	17-Sept-19	Granted	10,418,136	Kris Singh John Griffiths Debu Majumdar	II
122	Self-Aligning Neutron Absorbing Apparatus for Reactivity Mitigation in Nuclear Fuel Storage Systems	17-Sept-19	Granted	10,418,137	Kris Singh Steve Agace	II
123	System for Low Profile Translation of High-Level Radioactive Waste	15-Oct-19	Granted	10,446,285	Kris Singh	V
124	High-Density Subterranean Storage System for Nuclear Fuel and Radioactive Waste	15-Oct-19	Granted	10,446,287	Kris Singh	III
125	Environmentally Sequestered Spent Fuel Pool	05-Nov-19	Granted	10,468,145	Kris Singh	X
126	Autonomous Self-Powered System for Removing Thermal Energy from Pools of Liquid Heated by Radioactive Materials, and Methods of the Same	12-Nov-19	Granted	10,472,996	Kris Singh Indresh Rampall Joseph Rajkumar	X
127	Steam Generator for Nuclear Steam Supply System	17-Dec-19	Granted	10,510,452	Kris Singh Joseph Rajkumar	X
128	Brazing Compositions and Uses Thereof	24-Dec-19	Granted	10,512,990	Kris Singh William Scholfield Dmitriy Kats Joseph Mosher Robert Sloan Tom Haynes	IV
129	Apparatus for Storing and/or Transporting Radioactive Materials	24-Dec-19	Granted	10,515,730	Kris Singh Stefan Anton Robert Mahorter	II
130	Dream Snap-in Insert for Reactivity Control in Spent Nuclear Fuel Pools and Casks	20-June-17	Granted	10,535,440	Steve Agace John Griffiths	I

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
					Steven Thompson Richard Springman	
131	Method for Preparing Spent Nuclear Fuel for Dry Storage	14-Jan-20	Granted	10,535,439	Kris Singh	II
132	Snap-In Insert for Reactivity Control in Spent Nuclear Fuel Pools and Casks	14-Jan-20	Granted	10,535,440	Kris Singh Steve Agace Stephen Thompson John Griffiths Richard Springman	I
133	Fail-Safe Control Rod Drive System for Nuclear Reactor	25-Feb-20	Granted	10,573,418	Kris Singh Patrick Ingravallo Leyland Vann	X
134	Fail-Safe Control Rod Drive System for Nuclear Reactor	25-Feb-20	Granted	10,573,419	Kris Singh Patrick Ingravallo Leyland Vann	X
135	Nuclear Reactor Shroud	03-Mar-20	Granted	10,580,539	Kris Singh Indresh Rampall Joseph Rajkumar	X
136	Manifold System for the Ventilated Storage of High-Level Waste and a Method of using the Same to Store High-Level Waste in a Below-Grade Development	07-Apr-20	Granted	10,614,924	Kris Singh	III
137	Rack for Underwater Storage of Spent Nuclear Fuel	12-May-20	Granted	10,650,933	Kris Singh	I
138	Loss-of-Coolant Accident Reactor Cooling System	26-May-20	Granted	10,665,354	Kris Singh Joseph Rajkumar	X
139	Nuclear Steam Supply System	26-May-20	Granted	10,665,357	Kris Singh Joseph Rajkumar	X
140	Component Cooling Water System for Nuclear Power Plants	02-June-20	Granted	10,672,523	Kris Singh Joseph Rajkumar	X

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
141	Atomized Piso scale Composite Aluminum Alloy and Method Thereof	09-June-20	Granted	10,676,805	Tom Haynes	IV
142	Container and System for Handling Damaged Nuclear Fuel, and Method of Making the Same	23-June-20	Granted	10,692,617	Kris Singh	II
143	Method of Storing High-Level Radioactive Waste	14-July-20	Granted	10,714,223	Kris Singh	II
144	Passive Reactor Cooling System	21-July-20	Granted	10,720,249	Kris Singh Joseph Rajkumar	X
145	Nuclear Reactor System Having Natural Circulation of Primary Coolant	28-July-20	Granted	10,726,962	Kris Singh Stefan Anton Ranga Nadig Indresh Rampall	X
146	Container for Radioactive Waste	20-Oct-20	Granted	10,811,154	Kris Singh John Griffiths Joseph Meckley Steve Agace	II
147	System and Method for Preparing a Container Loaded with Wet Radioactive Elements for Dry Storage	17-Nov-20	Granted	10,839,969	Kris Singh John Griffiths	II
148	Earthquake-Resistant Fuel Storage Rack System for Fuel Pools in Nuclear Plants	24-Nov-20	Granted	10,847,274	Kris Singh	I
149	Macro-Chip Enforced Alloy	24-Nov-20	Granted	10,843,272	Kris Singh Tom Haynes Luke Sobus	II
150	Fuel Basket for Spent Nuclear Fuel and Container Implementing the Same	01-Dec-20	Granted	10,854,346	Kris Singh Stefan Anton Richard Springman	II
151	Air-Cooled Heat Exchanger and System and Method of Using the Same to Remove Waste Thermal Energy from Radioactive Materials	01-Dec-20	Granted	10,854,344	Kris Singh Joseph Rajkumar	VIII

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
152	Apparatus for Storing and/or Transporting Radioactive Materials	08-Dec-20	Granted	10,861,612	Kris Singh Stefan Anton Robert Mahorter	II
153	Storage System for Nuclear Fuel	15-Dec-20	Granted	10,867,714	Kris Singh Steve Agace Richard Springman	II
154	Nuclear Waste Storage Canisters	22-Dec-20	Granted	10,872,707	Kris Singh	II
155	Flood and Wind-Resistant Ventilated Module for Spent Nuclear Fuel Storage	29-Dec-20	Granted	10,878,973	Kris Singh Stefan Anton	II
156	System and Method for Storing and/or Transferring High-Level Radioactive Waste	12-Jan-21	Granted	10,892,063	Kris Singh	II
157	Self-Alignment Method of Neutron Absorbing Apparatus for Reactivity Mitigation in Nuclear Fuel Storage Systems	02-Feb-21	Granted	10,910,119	Kris Singh Steve Agace	I
158	Moving an Entire Nuclear Reactor Core as a Unitary Structure	16-Feb-21	Granted	10,923,239	Kris Singh Stefan Anton Peter Stefanovic	V
159	System for Low Profile Translation of High-Level Radioactive Waste	09-March-21	Granted	10,939,787	Kris Singh	V
160	High-Density Subterranean Storage System for Nuclear Fuel and Radioactive Waste	16-March-21	Granted	10,950,361	Kris Singh	III
161	Single-Plate Neutron Absorbing Apparatus and Method of Manufacturing the Same	27-April-21	Granted	10,991,472	Kris Singh Evan Rosenbaum Tom Haynes	IV
162	System and Method for Minimizing Movement of Nuclear Fuel Racks During a Seismic Event	25-May-21	Granted	11,017,908	Kris Singh Charles Bullard	I
163	Method for Heating a Primary Coolant in a Nuclear Steam Supply System	08-June-21	Granted	11,031,146	Kris Singh Joseph Rajkumar	X
164	Multi-Component Cask for Storage and Transport of Spent Nuclear Fuel	22-June-21	Granted	11,043,312	Kris Singh	II

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
165	Container for Storing and/or Transporting Spent Nuclear Fuel	03-Aug-21	Granted	11,081,248	Kris Singh	II
166	Nuclear Waste Cask with Impact Protection	03-Aug-21	Granted	11,081,249	Kris Singh Charles Bullard Xuejun Zhai	II
167	Fail-Safe Control Rod Drive System for Nuclear Reactor	17-Aug-21	Granted	11,094,421	Kris Singh Patrick Ingravallo Leyland Vann	X
168	Steam Generator for Nuclear Steam Supply System	14-Sept-21	Granted	11,120,920	Kris Singh Joseph Rajkumar	X
169	Heat Exchanger for Severe Service Conditions	30-Nov-21	Granted	11,187,471	Kris Singh	VI
170	Air-Cooled Condenser System	21-Dec-21	Granted	11,204,201	Kris Singh	VIII
171	Optimized Nuclear Fuel Core Design for a Small Modular Reactor	21-Dec-21	Granted	11,205,521	Kris Singh Tom Marcille Joseph Rajkumar	X
172	Method of Preparing Spent Nuclear Fuel for Dry Storage	04-Jan-22	Granted	11,217,353	Kris Singh	II
173	Manufacturing Methods to Fortify Nuclear Waste Canisters from Stress Corrosion Cracking	15-Feb-22	Granted	11,250,962	Kris Singh	II
174	Nuclear Fuel Storage Facility	15-Feb-22	Granted	11,250,963	Kris Singh	II
175	Manifold System for the Ventilated Storage of High-Level Waste and a Method of Using the Same to Store High-Level Waste in a Below-Grade Environment	01-March-22	Granted	11,264,142	Kris Singh	III
176	Spent Nuclear Fuel Cask with Dose Attenuation Devices	22-March-22	Granted	11,282,615	Kris Singh	II
177	Nuclear Reactor Shroud	29-March-22	Granted	11,289,219	Kris Singh Indresh Rampall Joseph Rajkumar	X

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
178	Spent Nuclear Fuel Canister	29-March-22	Granted	11,289,227	Kris Singh	II
179	Nuclear Fuel Storage System with Integral Shimming	29-March-22	Granted	11,289,229	Kris Singh	II
180	Shell and Tube Heat Exchangers	19-Apr-22	Granted	11,306,972	Kris Singh	VI
181	Systems and Methods for Storing Spent Nuclear Fuel	24-May-22	Granted	11,342,091	Kris Singh	II
182	Ventilated Transfer Cask	28-June-22	Granted	11,373,774	Kris Singh John Griffiths	II
183	Storage and Transport Cask for Nuclear Waste	28-June-22	Granted	11,373,775	Kris Singh	II
184	Nuclear Reactor Vessel Support System	19-July-22	Granted	11,393,598	Kris Singh Stefan Anton Ranga Nadig Indresh Rampall	V
185	Passive Cooling Device for Casks Containing Nuclear Fuel	09-Aug-22	Granted	11,410,784	Kris Singh	II
186	Storage System for Radioactive Nuclear Waste and Pressure Surge Protection	13-Sept-22	Granted	11,443,862	Kris Singh John Griffiths	II
187	High-Density Subterranean Storage System for Nuclear Fuel and Radioactive Waste	11-Oct-22	Granted	11,469,008	Kris Singh	III
188	Cooling System for Casks Containing High-Level Nuclear Waste	01-Nov-22	Granted	11,488,737	Kris Singh Debu Majumdar Abrar Mohammad John Griffiths	II
189	Air-Cooled Condenser and Related Methods	22-Nov-22	Granted	11,504,814	Kris Singh Joseph Rajkumar	VIII
190	Flow Baffles for Shell and Tube Heat Exchangers	29-Nov-22	Granted	11,512,902	Kris Singh Joseph Rajkumar	VI

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
191	Method of Retrofitting a Spent Nuclear Fuel Storage System	29-Nov-22	Granted	11,515,054	Kris Singh Stephen Thompson John Griffiths Richard Springman	I
192	Nuclear Waste Storage Canisters, Welds, and Method of Fabricating the Same	29-Nov-22	Granted	11,515,056	Kris Singh	II
193	Radiation Shielding Enclosure for Spent Nuclear Fuel Cask	06-Dec-22	Granted	11,521,761	Kris Singh	II
194	Brazing Composition and Uses Thereof	03-Jan-23	Granted	11,541,484	Kris Singh William Scholfield Dmitriy Kats Joseph Mosher Robert Sloan Tom Haynes	IV
195	Autonomous Self-Powered System for Removing Thermal Energy from Pools of Liquid Heated by Radioactive Materials	31-Jan-23	Granted	11,569,001	Kris Singh Indresh Rampall Joseph Rajkumar	X
196	Macro-Chip Reinforced Alloy	28-Feb-23	Granted	11,590,573	Kris Singh Tom Haynes Luke Sobus	IV
197	Air-Cooled Condenser System	14-Mar-23	Granted	11,604,030	Kris Singh Vytas Maciunas Ragu Palle	VIII
198	Nuclear Waste Cask with Impact Protection, Impact Amelioration System for Nuclear Fuel Storage, Unventilated Cask for Storing Nuclear Waste, and Storage and Transport Cask for Nuclear Waste	21-Mar-23	Granted	11,610,696	Kris Singh Charles Bullard Xuejun Zhai John Griffiths	II
199	Nuclear Fuel Storage System with Integral Shimming	06-June-23	Granted	11,670,430	Kris Singh	II

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
200	System and Method of Storing and/or Transferring High-Level Radioactive Waste	04-July-23	Granted	11,694,817	Kris Singh	II
201	Nuclear Materials Apparatus and Implementing the Same	01-Aug-23	Granted	11,715,575	Kris Singh	II
202	Impact Amelioration System for Nuclear Fuel Storage	08-Aug-23	Granted	11,721,447	Kris Singh John Griffiths	II
203	High-Density Subterranean Storage for Nuclear Fuel and Radioactive Waste	15-Aug-23	Granted	11,728,061	Kris Singh	III
204	Ventilated Cask for Nuclear Waste Storage	22-Aug-23	Granted	11,735,327	Kris Singh Steve Agace Robert Mahorter	II
205	System and Method for Preparing a Container Loaded with Wet Radioactive Elements for Dry Storage	29-Aug-23	Granted	11,742,102	Kris Singh John Griffiths	II
206	Storage and Transport Cask for Nuclear Waste	26-Sept-23	Granted	11,769,602	Kris Singh	II
207	Air-Cooled Condenser with Deflection Limiter Beams	24-Oct-23	Granted	11,796,255	Kris Singh Vytas Maciunas Ragu Palle	VIII
208	Radiation Shielding Enclosure for Spent Nuclear Fuel Cask	24-Oct-23	Granted	11,798,699	Kris Singh	II
209	High-Density Subterranean Storage System for Nuclear Fuel and Radioactive Waste	23-Jan-24	Granted	11,881,323	Kris Singh Steve Agace	III
210	Storage System for Radioactive Nuclear Waste with Pressure Surge Protection	23-Jan-24	Granted	11,881,324	Kris Singh John Griffiths	II
211	Container for Radioactive Waste	30-Jan-24	Granted	11,887,744	Kris Singh Steve Agace	II
212	Cask with Ventilation Control for Spent Nuclear Fuel Storage,”	02-July-24	Granted	12,027,279	Kris Singh Fred Bidrawn	II
213	Fuel Rack for Storing Spent Nuclear Fuel	09-July-24	Granted	12,033,764	Kris Singh Stephen Agace	II
214	Induced Draft Air-Cooled Condenser System	27-Aug-24	Granted	12,072,151	Kris Singh Akhilesh Bapat	VIII

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
					Vytas Maciunas Raghavendra Palle	
215	Nuclear Waste Cask with Impact Protection, Impact Amelioration System for Nuclear Fuel Storage, Unventilated Cask for Storing Nuclear Waste, and Storage and Transport Cask for Nuclear Waste	03-Sept-24	Granted	12,080,440	Kris Singh Charles Bullard Xuejun Zhai John Griffiths	II
Patent Filings in Pending Status						
1	Treating the External Surface of Shell-Type Stainless Steel Structures to Protect Against Stress Corrosion Cracking	29-Nov-22		Appl. #62551914	KP Singh Chuck Bullard	V
2	Axi-Flow Baffle for Tubular Heat Exchangers			Appl. #62655858	Kris Singh Joseph Rajkumar	VI
3	A Portable Robotic Welder			Appl. #62887984	Kris Singh Brian Farnsworth	II
4	Heavily Shielded Unventilated Cask for Storing Nuclear Waste			Appl. #62969183	Kris Singh	II
5	Deeply Imbedded Ventilated Storage (DTVS) System for Used Nuclear Fuel & High-Level Waste			Appl. #63123706	Kris Singh	III
6	A Feed Air Pre-Conditioning System for Air Cooled Condensers			Appl. #63121123	Kris Singh Steve Agace	VIII
7	Combination Transport and Disposal Package for Radioactive Components			Appl. #63143236	Steve Agace	II
8	A Device to Prevent Rattling of Free-Standing Components Under Earthquake or other Vibratory Loads			Appl. #63176496	Kris Singh	V

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
9	Stacked Column of Vertical Ventilated Modules to Store Canisters Contained Used Nuclear Fuel or High-Level Waste			Appl. #63189383	Kris Singh	II
10	Green Energy Thermal Storage System: A Novel Technology to Convert Operating Fossil Burning Power Plants into Energy Storage and On-Demand Clean Power Generation Units			Appl. #63209234 Appl. #63297899 Non-Provisional: 18/239949	Kris Singh	IX
11	Fuel Storage Device with Prismatic Hexagonal or Rectangular Cross-Section Cells			Appl. #63271849	Kris Singh Steve Agace	II
12	Dream Insert for Grand Gulf Racks			Appl. #63285502	Steve Agace	I
13	Hybrid Laser Arc Welding (HyLAW)				Kris Singh Brian Farnsworth	IV
14	Novel Impact Limiter Embodiment for Transport Casks for Radioactive Materials/Thermal Shield Design for Protection of Cask Containment				Kris Singh	II
15	Stationary Impact Limiter for Nuclear Fuel Transport			Appl. #48735419 #18/381466	Kris Singh Venkat Prabhala	V
16	Automated Eddy Current Tube Tester				Brian Farnsworth	IV
17	Converting Coal Burning Plants into Clean Energy Sites			Appl. #63/510,535	Kris Singh Indresh Rampall	IX
18	Deeply Submerged Prismatic Cellular Module for Storing Spent Nuclear Fuel			Appl. #63/492586 #63/558,778	Kris Singh Steve Agace	I
19	HI-THERM CSP Technology			Appl. #63/507,467 #63/597,932	Kris Singh Yogi Goswami Indresh Rampall	IX

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
20	Combining Nuclear & Intermittent Energy Supply from Renewables			Appl. #63/512,443 #18/451,247 (Non-Prov)	KP Singh Yogi Goswami Indresh Rampall	IX
21	Control Rod Blade Box Storage Rack			Appl. #63/510,498	Steve Agace Evan Rosenbaum Michael Williams	II
22	Multi-Loop Gravity Driven Nuclear Reactor				Kris Singh	X
23	Holtec Fuel Repair Device			Appl. #63/514,001	Mike Williams Venkat Prabhala Nissan Gelb Andrew Fernsten	I
24	Innovative Design Strategies to Maximize the Power Outlet in a Gravity Driven Nuclear Reactor Such as SMR-160			Appl. #63/519,330	Kris Singh	X
25	Innovative Light Water Reactor			Appl. #63/585,670	Kris Singh	X
26	Novel Design Approach to House a Nuclear Reactor in a Subterranean Cavity			Appl. #63/615,872	Kris Singh Abrar Mohammad Anveshan Bommareddi	X
27	Innovative Design Strategy to Protect a Nuclear Plant Steam Generator from Earthquakes and Shielding its Surroundings from its Accreted Radiation			Appl. #63/615,883	Kris Singh Anveshan Bommareddi	X
28	Hybrid Solar Power Plant			Appl. #63/619,047	Kris Singh Yogi Goswami Indresh Rampall	IX
29	A Cask for On-Site Transfer of a Cannister Containing Used Nuclear Fuel or Non-Fuel Waste			Appl. #63/573,038	Kris Singh Steve Agace	??

Title		Patent Grant Date	Status	Patent No.	Inventor(s)	Subject
30	Holtec Power Tower (HPT)			Appl. #63/670,371	Kris Singh	??
31	SOLAREX: The Concentrated Solar Receiver			Appl. #63/697,991	Kris Singh Ed Bell Indresh Rampall DC Selvakumar	??